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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,633	07/25/2001	Paul A. Kline	CRNT-0020	6345

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MICHAEL D. STEIN
WOODCOCK WASHBURN KURTZ MACKIEWICZ & NORRIS LLP
ONE LIBERTY PLACE
46TH FLOOR
PHILADELPHIA, PA 19103

EXAMINER

BOUTSIKARIS, LEONIDAS

ART UNIT PAPER NUMBER

2872

DATE MAILED: 11/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/912,633

Applicant(s)

KLINE, PAUL A.

Examiner

Leo Boutsikaris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/28, 10/21/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114.

Applicant's submission filed on 6/28/2004 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 7-8, 11-14, 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cern (US 2002/0105413) in view of Summerhayes (US 4,070,572).

Regarding claims 1, 8, Cern discloses a method of communicating (i.e., sending and receiving) high frequency data signals over power lines comprising the steps of decoupling first data signals representing first data from the MV (medium voltage) power line using inductive means 1102; conditioning the first data signals using signal modem 1202; coupling the first data

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to a first end of an optical isolator coupled at end 1210 of the signal modem; and in a transmitting signals over the power line, receiving second data from the optical isolator; conditioning the second data to form second data signal using the signal modem and coupling the second data to the power line (see Fig. 12, [0124]-[0126]). However, Cern does not specify that the optical isolator is an optical fiber. Summerhayes discloses an optical data transmission system wherein signal data from a sensor located at a point along a power line is transmitted to a monitoring station via the use of an optical fiber (Fig. 1, line 60, col. 2 to line 55, col. 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an optical fiber as the optical isolator in the system of Cern, for achieving high dynamic range, linearity and accuracy (see lines 42-51, col. 1 in Summerhayes).

Furthermore, Cern only shows one optical fiber for the coupling and uncoupling of the high frequency signals. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use two separate optical isolators, one for the uncoupling and a second one for the coupling of the high frequency signals from and to the power line, since it has been held that a mere duplication of working parts of a device involves only routine skill in the art. *In re Harza*, 272 F.2d 669, 124 USPQ 378 (CCPA 1960). Two separate isolators offer a greater flexibility in choosing the spatial distribution of the “download” points off the power lines in conjunction with the consumer needs. Finally, it is noted that it is inherent that a light transducer is used to convert electrical to light signals and vice versa.

Regarding claims 11, 18-19, it is inherent that various circuit components require a power source.

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Regarding claims 2-3, 12-13, the decoupling of the modulated high frequency signal is achieved by using an inductive coupler comprising a magnetically permeable core 1105 and a winding 1104, 1115 traversing through the core (Fig. 11 and [0112]-[0113], [0115]).

Regarding claims 4, 14, the core is disposed substantially around the entire circumference of the power line 1110, and comprises a first portion and a second portion connected together via a hinge (see jointing area in the core circumference in Fig. 11A, and [0080]).

Regarding claims 7, 17, the optical isolator is coupled to an interface device 1202 for electronic data signals.

Claims 5-6, 9, 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cern (US 2002/0105413) in view of Summerhayes (US 4,070,572) and further in view of Killian (US 4,017,845).

Cern in view of Summerhayes discloses all the limitations of the above claims except for teaching that a second toroid is provided around the power line for inductively providing power. It is noted that in Cern's system, one or more magnetic toroid cores are disposed around the power line ([0078]). Killian discloses a circuit for simultaneous transmission of high frequency signals over a power line, wherein power from a power supply is provided at a point where the high frequency signal is coupled to the power line, by using inductive means (lines 65-68, col. 3 and lines 34-37, col. 6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to inductively provide power to the transmission system of Cern, as taught by Killian, for providing a low impedance to the low frequency voltage (see lines 24-27, col. 3).

Claims 10, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cern (US 2002/0105413) in view of Summerhayes (US 4,070,572) and further in view of Whyte (US 4,142,178).

Cern in view of Summerhayes discloses all the limitations of the above claims except for teaching that the uncoupling, coupling and conditioning of the high frequency signal is performed within a protected environment. Whyte discloses a distribution network power line for communicating high frequency signals over a network, wherein high frequency signals are coupled off the network at selected points, with the steps of coupling and decoupling being performed within a protected environment (see Fig. 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to enclose the circuit enabling the uncoupling/coupling and demodulation of the high frequency signal off a power line within a protected environment, for avoiding the deleterious effects of external environmental factors as well as for better safety of technicians servicing the network.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 1 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application No.

10/429,338. Although the conflicting claims are not identical, they are not patentably distinct from each other because it is inherent that to convert an electrical signal to a light signal and vice versa a light transducer (cited in claim 1 of 09/912,633 and lacking in claim 1 of 10/429,338) is required.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

The allowability of claims 1-20, indicated in the Office Action of 4/20/2004 is hereby withdrawn. It is noted that the Examiner's comment (found in the Office Action of 8/13/2003), regarding the relevance of the Cern and Summerhayes references to the claimed invention is not inconsistent with the rejection grounds presented in this Office Action. Specifically, through the use of an optical fiber coupled to a power line, it is possible to both filter the low voltage noise and also couple/uncouple the high frequency signal to and from the medium voltage power line.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Leo Boutsikaris whose telephone number is 571-272-2308.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Leo Boutsikaris, Ph.D.
Primary Patent Examiner, AU 2872
November 12, 2004

